

CLAIMS

1. Apparatus for detecting a local maximum in a two-dimensional data set, wherein the data set is represented by a stream of data elements, the apparatus comprising:
first detection logic that receives the data stream and operates to detect a first data element that represents a peak in a first dimension of the data set; and
second detection logic that receives the data stream and operates to detect a second data element that represents a peak in a second dimension of the data set, wherein a local maximum is detected if the first and second data elements are the same element.
2. The apparatus of claim 1, further comprising logic to process the data set to produce the stream of data elements.
3. The apparatus of claim 1, wherein the first detection logic further comprises flag logic to associate a flag with the first data element.
4. The apparatus of claim 1, wherein in the second detection logic further comprises logic to process the flag to determine if the first and second data elements are the same element.
5. The apparatus of claim 1, further comprising output logic that outputs information about the local maximum.
6. The apparatus of claim 5, wherein in the information about the local maximum comprises an identifier that identifies a location of the local maximum in the data set.
7. The apparatus of claim 1, wherein the first detection logic comprises first register logic that operates to receive the data stream and output selected data elements that are adjacent in the first dimension of the data set.
8. The apparatus of claim 7, wherein the first detection logic comprises comparator logic that operates to compare the selected data elements to determine the first data element, and wherein the comparator logic has an output that is coupled to the flag logic.
9. The apparatus of claim 1, wherein the second detection logic comprises register logic that operates to receive the data stream and output selected data elements that are adjacent in the second dimension of the data set.

10. The apparatus of claim 9, wherein the second detection logic comprises comparator logic to compare the selected data elements to determine the second data element.

11. The apparatus of claim 1, wherein the two-dimensional data set comprises rows and columns of data elements, and wherein the first dimension of the data set is defined by the number of columns, and the second dimension of the data set is defined by the number of rows.

12. Apparatus for detecting a local maximum in a two-dimensional data set, wherein the data set is represented by a stream of data elements, the apparatus comprising:
means for receiving the data stream;
means for detecting a first data element that represents a peak in a first dimension of the data set; and
means for detecting a second data element that represents a peak in a second dimension of the data set, wherein a local maximum is detected if the first and second data elements are the same element.

13. The apparatus of claim 12, further comprising means for processing the data set to produce the stream of data elements.

14. The apparatus of claim 12, wherein the means for detecting the first data element further comprises means for associating a flag with the first data element.

15. The apparatus of claim 12, wherein the means for detecting the second data element further comprises means for processing the flag to determine if the first and second data elements are the same element.

16. The apparatus of claim 12, further comprising means for outputting information about the local maximum.

17. The apparatus of claim 16, wherein the information about the local maximum comprises an identifier that identifies a location of the local maximum in the data set.

18. The apparatus of claim 12, wherein the means for detecting the first data element comprises:

means for storing a portion of the data stream; and

means for outputting selected data elements from the stored of portion of the data stream that are adjacent in the first dimension of the data set.

19. The apparatus of claim **18**, wherein the means for detecting the first data element comprises means for comparing the selected data elements to determine the first data element.

20. The apparatus of claim **12**, wherein the means for detecting the second data elements comprises:

means for storing a portion of the data stream; and

means for outputting selected data elements from the stored of portion of the data stream that are adjacent in the second dimension of the data set.

21. The apparatus of claim **20**, wherein the means for detecting the second data element comprises means for comparing the selected data elements to determine the second data element.

22. The apparatus of claim **12**, wherein the two-dimensional data set comprises rows and columns of data elements, and wherein the first dimension of the data set is defined by the number of columns, and the second dimension of the data set is defined by the number of rows.

23. A method for detecting a local maximum in a two-dimensional data set, wherein the data set is represented by a stream of data elements, the method comprising:

receiving the data stream;

detecting a first data element in the data stream that represents a peak in a first dimension of the data set;

associating a flag with the first data element;

detecting a second data element in the data stream that represents a peak in a second dimension of the data set; and

detecting a local maximum if the flag is associated with the second data element.

24. The method of claim **23**, further comprising processing the data set to produce the stream of data elements.

25. The method of claim **23**, further comprising outputting information about the local maximum.

26. The method of claim 23, wherein the information about the local maximum comprises an identifier that identifies a location of the local maximum in the data set.

27. The method of claim 23, wherein the step of detecting the first data element comprises:

storing a portion of the data stream; and

outputting selected data elements from the stored portion of the data stream that are adjacent in the first dimension of the data set.

28. The method of claim 27, wherein the step of detecting the first data element comprises comparing the selected data elements to determine the first data element.

29. The method of claim 23, wherein the step of detecting the second data elements comprises:

storing a portion of the data stream; and

outputting selected data elements from the stored portion of the data stream that are adjacent in the second dimension of the data set.

30. The method of claim 29, wherein the step of detecting the second data element comprises comparing the selected data elements to determine the second data element.

31. The method of claim 23, wherein the two-dimensional data set comprises rows and columns of data elements, and wherein the first dimension of the data set is defined by the number of columns, and the second dimension of the data set is defined by the number of rows.

32. A computer-readable media comprising instructions, which when executed by a processor, operate to detect a local maximum in a two-dimensional data set, wherein the data set is represented by a stream of data elements, the computer-readable media comprising:

instructions for receiving the data stream;

instructions for detecting a first data element that represents a peak in a first dimension of the data set; and

instructions for detecting a second data element that represents a peak in a second dimension of the data set, wherein a local maximum is detected if the first and second data elements are the same element.

33. The computer-readable media of claim 32, further comprising instructions for processing the data set to produce the stream of data elements.

34. The computer-readable media of claim 32, wherein the instructions for detecting the first data element further comprise instructions for associating a flag with the first data element.

35. The computer-readable media of claim 32, wherein the instructions for detecting the second data element further comprise instructions for processing the flag to determine if the first and second data elements are the same element.

36. The computer-readable media of claim 32, further comprising instructions for outputting information about the local maximum.

37. The computer-readable media of claim 36, wherein the information about the local maximum comprises an identifier that identifies a location of the local maximum in the data set.

38. The computer-readable media of claim 32, wherein the instructions for detecting the first data element comprise:

instructions for storing a portion of the data stream; and

instructions for outputting selected data elements from the stored portion of the data stream that are adjacent in the first dimension of the data set.

39. The computer-readable media of claim 38, wherein the instructions for detecting the first data element comprise instructions for comparing the selected data elements to determine the first data element.

40. The computer-readable media of claim 32, wherein the instructions for detecting the second data elements comprise:

instructions for storing a portion of the data stream; and

instructions for outputting selected data elements from the stored portion of the data stream that are adjacent in the second dimension of the data set.

41. The computer-readable media of claim 40, wherein the instructions for detecting the second data element comprise instructions for comparing the selected data elements to determine the second data element.

42. The computer-readable media of claim 32, wherein the two-dimensional data set comprises rows and columns of data elements, and wherein the first dimension of

the data set is defined by the number of columns, and the second dimension of the data set is defined by the number of rows.